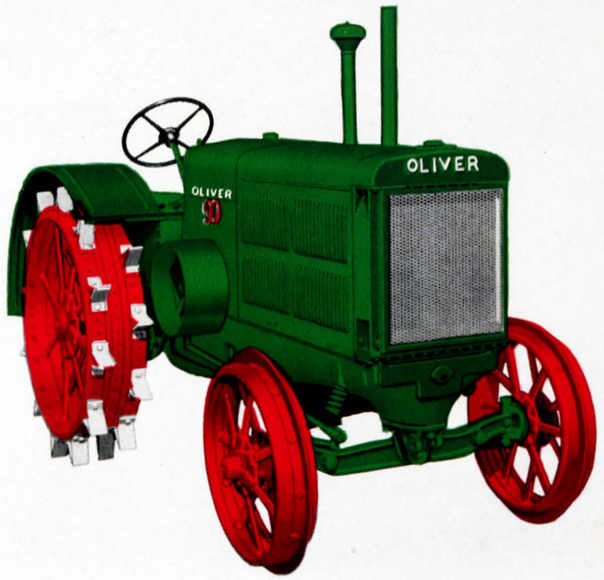
THE "90" OLIVER



THE OLIVER "90" 4-PLOW TRACTOR FOR BIG ACREAGE FARMING

It pays to ride with a leader that's going in your direction. That is why increasing numbers of big acreage farmers and custom operators are hitching their heavy tractor work to the Oliver "90" this year.

The Oliver "90" is the finest 4-plow, 3-fuel tractor built—tougher than a 16-mule team and a lot more thrifty on fuel—with a high-speed, 4-speed transmission and the fuel-saving Oliver Variable Speed Governor Control that fits the power to the job—with self-starter and electric lights available.

Here is a really modern tractor that has everything to insure an always dependable flow of power from engine to drawbar or belt pulley. Here is an engine designed and built for extra power, endurance and economy, with every advanced engineering feature—a transmission that is one of the strongest and most efficient made—a minimum of weight per horsepower, correctly distributed over the chassis to give the most effective power with perfect stability on the drawbar or in the belt.

Just give the "90" fuel, oil and water, step on the starter, and you're ready to go any time. You can run day and night when the rush is on because the "90" is built to whip tough working conditions—it can "give it" as well as "take it." Come the withering heat of summer's harvest fields, the chill days of late fall or early spring plowing, or a frigid winter's day of corn shelling, and there is the easy-starting "90" on the job, working with a will.

Surplus power, instantly adjustable to the work requirements, enables the "90" to take the heavy jobs in stride without the fuel waste and strain of *pushing* the engine, and to handle lighter jobs economically.

That is the *WHY* of "90" leadership among 4-plow tractors. It's built from one end to the other of its compact, easily handled chassis to *GIVE MORE* work at less cost, to *TAKE MORE* punishment with lowest upkeep expense.

No matter what tractor you drive now, investigate the Oliver "90"—money-saving power for large acreage farming. Only one tractor on wheels is more powerful than the "90" and that's the Oliver "99" high-compression tractor for gasoline operation.

If mechanically minded, check the specifications against any other 4-plow, 3-fuel tractor. If you prefer to judge on performance, ask for a demonstration. See how much more you get in the "90."

IT'S JUST GOOD JUDGMENT TO GET AN OLIVER TRACTOR

THE OLIVER "90" 4-PLOW POWER

The Oliver "90" Tractor

MODERN *BIG* POWER FOR *BIG* ACREAGE FARMING

BUILT TO GET MAXIMUM 3-FUEL PERFORMANCE FROM GASOLINE, KEROSENE OR DISTILLATE

EXCLUSIVE DESIGN

Step on the "90's" self-starter and what happens?—once over to clear the cylinders, then No. 1 draws in a deep breath of gas mixture followed by Nos. 2, 4 and 3 in quick succession . . . No. 1 comes up to compression, the Oliver high-tension magneto shoots a sure-fire fat spark . . . there's a sharp bark . . . instantly the great "90" power plant whips into action then settles down to a powerful, deep-throated hum as it waits for your command at the throttle and gear shift.

Some engines have *this* feature, and other engines have *that*. But in the Oliver "90" valve-in-head engine you get advanced engineering at every point, in addition to the exclusive Oliver manifold and head design that insure maximum 3-fuel performance.

EQUAL POWER FROM ALL CYLINDERS

The fuel, gasoline, kerosene or distillate, properly mixed with air by the carburetor and vaporized in the manifold, is drawn through a series of distributing chokes in the manifold and cylinder head. Their churning action gives the fuel greater velocity and prevents wastage. Even amounts of fuel are fed to all cylinders alike, center, front and rear.

Each cylinder head is so shaped that the fuel mixture is drawn in with a swirl called turbulence—producing a series of miniature tornadoes that spreads the fuel through the entire combustion chamber and packs it against the spark plugs, so that when the spark is set off, the result is thorough, instantaneous combustion. The burning of fuel is cleaner, more complete. Less carbon accumulates in the cylinders; there is less crankcase dilution; and knocking is eliminated. The perfected Oliver "90" cooling system sends the coolest water to the hottest motor parts, and maintains a practically uniform temperature throughout the engine. It also aids in getting more power from the fuel.

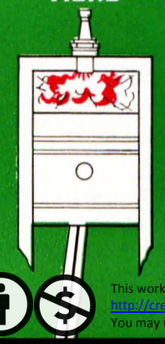
VARIABLE SPEED

Another reason why the Oliver "90" operates with such fuel economy is the Oliver Variable Speed Governor. This is set to maintain a maximum engine speed of 1125 r.p.m. under normal operating conditions and functions automatically. But there is also a speed control at your finger tips when you drive the "90". If you find that the tractor can easily "walk away with the load," you can cut the engine r.p.m. by instant governor adjustment, and shift to a higher transmission speed so that the tractor will maintain its rate of travel at lower engine speed but with open throttle—its most efficient operating point.

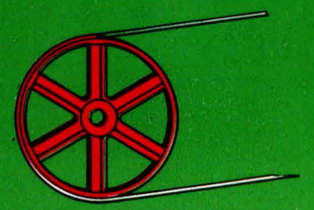
In this way, only the fuel needed to do the work is used. The "90" takes full advantage of the energy modern fuels produce. You get "two-plow tractor" fuel economy when pulling a "two-plow load."

It's sweet power, this Oliver "90"—power such as only the long-experienced Hart-Parr Division of Oliver builds—power that turns four furrows as neatly as you ever saw, that operates big combines and threshers and does other big power jobs in a big way.

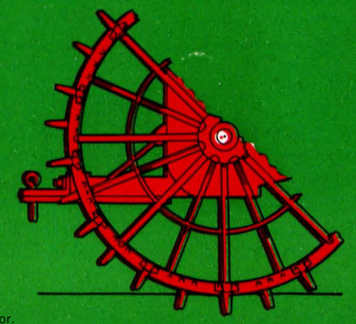
IT'S WHAT HAPPENS HERE



THAT COUNTS HERE



AND HERE



The Oliver "90" Tractor

MODERN *BIG* POWER FOR *BIG* ACREAGE FARMING

GET THE MOST EFFECTIVE WORK OUTPUT

THE WORK DONE RATES THE TRACTOR

As every experienced tractor operator knows, there's often a big difference between a tractor's rating and the actual work it will do. There are 4-plow tractors and 4-plow tractors. Check the "90's" high travel speed and easy handling, its thorough dependability, and flexible surplus power on the drawbar and in the belt. Check this all-around superior performance against any 4-plow tractor, and you'll choose the Oliver "90" because it gives you the *Most Effective Work Output.* It works more acres at lower cost.

LESS WEIGHT PER HORSEPOWER

The "90" uses less fuel in moving itself around because of the remarkably compact design. There's less weight per horsepower in both engine and chassis. Perfected weight distribution puts every pound to work giving solid traction and stability.

BELT POWER—POWER TAKE-OFF

Besides the drawbar jobs, the "90" also provides ideal power for belt and power take-off work. Both are operated from the driver's seat by a separate clutch, which permits backing into the belt with a dead pulley; and on power take-off, permits running a drawn machine when the tractor is standing still. There is ample power to handle virtually any farm equipment, including the largest threshers now built, silo fillers, hay balers, two-row potato diggers, etc., with steady, surplus power.

The belt pulley is easily removed and is mounted amidships, well in front of the drive wheels.

Power take-off is special equipment, but is virtually a built-in attachment, requiring only the addition of a single shaft.

ON STEEL WHEELS OR RUBBER TIRES

The Oliver "90" is provided with wheel equipment to take full advantage of its great power in all types of work and soil. This is described on page 10. Standard equipment is steel drive wheels with spade lugs. Rubber tires on cast disc wheels are available.

Many tests seem to prove that rubber tires put more power at the drawbar under normal operating conditions, reduce wearing shock and vibration, cut operating costs, save time moving from job to job, and generally speed up farm work. They are also ideal for highway travel.

"90" SPEED CHART

1st	2¼ Miles Per Hour	(All at rated engine speed of 1125 R.P.M.)
*2nd	3⅛ Miles Per Hour	
*3rd	4⅛ Miles Per Hour	
#4th	5½ Miles Per Hour	
Reverse	3¼ Miles Per Hour	

*Plowing speeds #Road speed

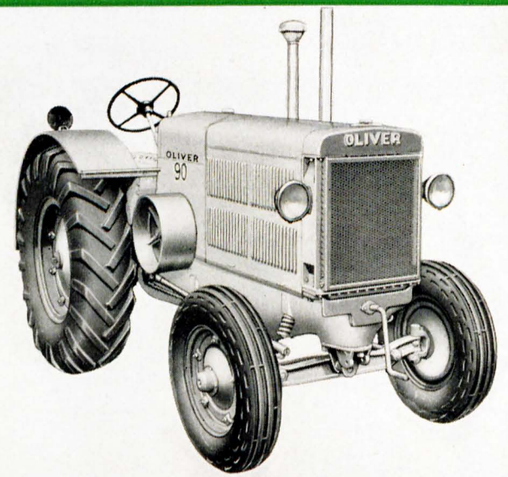
REPRESENTATIVE PLOW CHART AT 2, 3 AND 4 M.P.H.

PLOW	Width of Cut	Work Done per 10-Hour Day, 20 Miles Traveled at 2 M.P.H. "Horse" Speed, or "Low" Tractor Speed	Work Done per 10-Hour Day, 30 Miles Traveled at 3 M.P.H. Tractor Speed	Work Done per 10-Hour Day, 40 Miles Traveled at 4 M.P.H. Tractor Speed
2 Bottom Plow	24″	4.85 Acres	7.27 Acres	9.70 Acres
2 Bottom Plow	28″	5.65 Acres	8.48 Acres	11.30 Acres
3 Bottom Plow	48″	9.68 Acres	14.52 Acres	19.36 Acres
3 Bottom Plow	54″	10.9 Acres	16.35 Acres	21.8 Acres
4 Bottom Plow	56″	11.3 Acres	16.95 Acres	22.6 Acres
4 Bottom Plow	64″	12.9 Acres	19.36 Acres	25.8 Acres

Plow Chart for the "90" at its 3 Work Speeds

4 Bottom Plow Acres Plowed	64″ Cut	at 2¼ M.P.H. 14.52 Acres	at 3⅛ M.P.H. 21.4 Acres	at 4⅛ M.P.H. 27.8 Acres

The Oliver "90" Tractor on Rubber Tires



ITS BIG, HUSKY POWER PLANT GIVES SPEED AND SURPLUS POWER TO THE OLIVER "90"

The Numbers Printed in Red, Below, Refer to the Big Cross Section View of the Tractor in the Inside Back Cover. Pull It Out and Refer to It as You Read.

VALVE-IN-HEAD ENGINE

The four-cylinder, valve-in-head engine **(8)** of the Oliver "90" gives you greater power—unusual durability—fuel economy and dependable operation—without unnecessary bulk and weight. Exclusively Oliver in design.

It operates on gasoline, kerosene or distillate. *Bore and Stroke* are 4¾″ x 6¼″. Normal operating speed is 1125 r.p.m. The piston displacement is 443 cubic inches. Firing order is 1-2-4-3.

The **Four Cylinders (12)** are fitted with removable nickel iron sleeves, ground and honed to a smooth, glass-like finish.

Pistons (13), also of nickel iron, are carefully machined to exacting limits and accurate weight. Each is fitted with 3 plain rings and 1 oil ring—all above the pin. Size and fit are held to very close limits. Piston Pin Bearings are renewable bronze bushings of ample size.

Each Piston and Connecting Rod Assembly (13) is carefully checked for weight and balance. The connecting rods are forged from special steel, heat-treated and accurately machined. Sets of connecting rods and pistons are matched for weight in each engine. Vibration, friction and wear are thus reduced to a minimum.

HEAT-RESISTING VALVES WORK AGAINST HARDENED INSERTS

Valves **(7)** resist high temperatures under heavy loads without warping or undue wear. The exhaust valves seat against hardened inserts in the head. Grinding is infrequent. *Exhaust and Intake Valves* are 2 inches in diameter. *Valve Rocker Arms* are forged steel operating on renewable bushings. Rocker arm sockets are hardened to resist wear from push-rod action. *Valve Tappets* are easily reached and adjusted. *Push Rods* are hardened at the ends for long life. Cam action is transmitted to the valves noiselessly by latest type mushroom valve lifters. The *Camshaft* is a steel forging, hardened and ground to size and shape. It operates in renewable bushings. The shaft is supported by four bearings.

THREE-INCH CRANKSHAFT

The abundant power created in the cylinders is carried to the "90's" transmission by the heavy, forged steel three-bearing crankshaft **(19)** . The shaft is machined and ground to 3″ diameter, then dynamically and statically balanced. It is drilled for pressure lubrication to all main and connecting rod bearings.

LONG-WEARING CRANKSHAFT AND CONNECTING ROD BEARINGS

The "90's" **Main Crank Bearings (21)** are bronze-backed, babbitt-lined, accurately fitted to crankshaft.

Connecting Rod Bearings are of spun babbitt. The bearing cap is secured by two special connecting rod bolts with slotted nuts and will not work loose.

MODERN FUEL, IGNITION, LUBRICATION, AND COOLING SYSTEMS ALWAYS DEPENDABLE

SEDIMENT-FREE FUEL SYSTEM

(14) The fuel strainer and removable sediment bowl between tank and carburetor prevent clogging and delays. Fuel feed is by gravity. Capacity of the main tank is 34 U.S. gallons. The auxiliary gasoline tank (for starting with kerosene or distillate) holds 1 U.S. gallon.

CARBURETOR

The carburetor **(17)** is of rugged construction for durability. It is accurately calibrated for most economical operation and delivers the correct fuel mixture for all speeds and loads.

OIL-WASH TYPE AIR CLEANER

Foreign matter is kept out of the engine by a simple, efficient, oil-wash type air cleaner with auxiliary centrifugal cleaner **(6)**. It requires but a few minutes to remove the accumulated dirt from the easily accessible oil cup and refill with fresh engine oil. There are no moving parts and nothing to freeze or wear out.

GEAR-DRIVEN TIMING

Gear-driven timing **(14)** positively and accurately controls ignition and valve action in the "90's" engine.

DEPENDABLE IGNITION

(10) The high-tension induction type magneto is self-lubricated. The spark is fixed and timed for maximum efficiency for all engine speeds and under all conditions. The magneto is flange mounted, and the impulse coupling is positively sealed against dust and moisture.

VARIABLE SPEED GOVERNOR

The Oliver Variable Speed Governor **(17)**, built into the "90's" engine, is controlled by a convenient hand lever to change engine operating speed. The governor is fully enclosed and automatically lubricated.

FORCE FEED LUBRICATION

The Oliver "90" force feed pressure oiling system **(20)** provides correct motor lubrication with real oil economy. It assures a motor that is always in better working condition and adds years of working life.

Full Pressure Lubrication is provided to all main bearings, connecting rod bearings, camshaft bearings, valve rocker arm bearings—to timing gears, governor drive, magneto drive, water pump and fanshaft. The oil pump, driven from the camshaft, is located in the sump near the center of the crankcase. A relief valve prevents damage from excessive pressure.

The Oil Filter has a filter element which can be cleaned or replaced when necessary. It removes sludge, grit or metallic sediment from the oil before it can reach the working parts of the engine. The "90" is thus lubricated with clean oil.

Oil Capacity of Crankcase is 3 gallons. Crankcase oil pan is easily removed for access to and adjustment of connecting rod bearings. An oil level indicator of the bayonet type shows the amount of oil in the crankcase. A filter type crankcase breather helps keep oil clean.

COOLEST WATER TO THE HOTTEST PART

In the "90" the coolest water in the system is drawn from the bottom of the radiator **(9)** and pumped under pressure to the top of the motor, across the hottest parts, around the valves, valve stems, spark plugs and combustion chambers. This gives the Oliver "90" a water temperature variation of not more than 7 degrees which is considerably lower than that of the ordinary tractor engine.

MEANS REDUCED OPERATING COSTS

In operation, "The Coolest Water to the Hottest Parts" means: (1) More power developed from the fuel; lower fuel cost. (2) Better lubrication; lower oil cost. (3) Better operation; added years of tractor life.

TUBULAR RADIATOR

The Radiator **(9)** is of the tubular type, with cast iron frame and tanks. Cooling system capacity is 10½ gallons. Temperature gauge and an adjustable radiator curtain are standard equipment.

The Water Pump is of the impeller type. Water pump bearings automatically lubricated and require little attention. The four-blade, big diameter *Cooling Fan*, and the pump, are driven direct from the crankshaft by the *V-belt Fan Drive*. Fan Pulley is adjustable for tightening the belt.

The Oliver "90" Tractor
MODERN BIG POWER FOR BIG ACREAGE FARMING

RADIATOR SHUTTER CONTROLLED FROM SEAT

For your convenience, an adjustable radiator shutter is furnished as extra equipment. Proper use of the shutter permits a quicker warm-up of the engine on cold as well as warm days. It assists in making combustion of the fuel more complete by helping to maintain the correct engine water temperature regardless of the weather. On distillate or "tractor fuel" burning tractors, the use of the shutter permits quicker switching over to the lower-grade fuel. All adjustments are quickly made by means of an easily operated handle located below the steering wheel which is within easy reach of the operator from the tractor seat.

Steering Column Control. One Full Turn Opens or Closes Shutter

A RUGGED, EFFICIENT TRANSMISSION PUTS THE "90's" STEADY, FLEXIBLE POWER TO WORK

The irresistible flow of power from the four busy cylinders of the "90" is put to work efficiently by the rugged 4-speed transmission **(1)** built to automotive standards of quality. It is controlled by a conveniently located, easily operated shifting lever.

BIG, LONG-LIVED CLUTCH

The sure-acting clutch **(22)** is easily operated by a foot pedal. It is simple and long-lived, of the single-plate dry type, 14-inch diameter, and spring loaded. When after much service it needs refacing, it is easily removed and reinstalled.

LONG-WEARING GEARS AND SHAFTS

For extra strength and longer life, the Oliver gear train is built up with sliding spur gears **(26)** cut from solid chrome-nickel steel, carburized and hardened. All shafts are heat-treated and mounted on high grade ball or roller bearings **(23)**.

FINAL DRIVE

The final drive **(29)** to the rear wheels is through a ring gear and forged bull pinion to oversize live axles forged of steel. The ring gear and bull pinion are carburized and hardened alloy steel.

TRANSMISSION LUBRICATION

Oil distribution for all transmission gears **(25 & 27)** is automatic—whether the tractor is traveling on steep grades or on level ground. Transmission oil capacity is 12 U.S. gallons. One opening, located in the top transmission cover serves for filling both compartments. An oil level plug at the rear indicates the height of oil in the transmission case. Oil recommended for transmission is SAE No. 160 in summer, and SAE No. 90 in winter.

EVERY PART EASILY ACCESSIBLE FOR NECESSARY OPERATING ADJUSTMENT

The easy-to-get-at design of the "90" is of great importance to every owner—*not* because he will have to do much service work on this rugged machine—but rather because he can quickly and easily make slight adjustments and minor corrections that might develop into expensive trouble were it not for accessibility.

VALVES IN HEAD

The valves **(7)** are easy to get at for adjustments, without removing the head. With hardened inserts for the exhaust valves, there will be little need for grinding.

MOTOR BEARINGS

(19 & 21) The entire set of connecting rod bearings and main bearings is easily reached by removing the oil pan which forms the bottom half of the crankcase.

TRANSMISSION

(5) The tops can be removed from the mid-section of the transmission housing to give easy and complete access to transmission, differential, power take-off, and pulley drive.

There's Plenty of Power and Endless Operating Satisfaction When You Own a "90".

The Oliver "90" Tractor

MODERN *BIG* POWER FOR *BIG* ACREAGE FARMING

THE "90's" EASY TURNING, SHORT-RADIUS STEERING MEANS LESS DRIVER FATIGUE AND SHORTER HEADLANDS

WIDELY ADJUSTABLE DRAWBAR

The sturdy drawbar **(28)** of the "90" is of the adjustable, spring-mounted, swinging type, and attaches securely to the lower rear part of the transmission housing. It is located well below the power take-off connection, and provides plenty of clearance when power take-off is used. A vertical adjustment of from 13″ to 19″ above the ground, and a lateral adjustment of 23½″, provide a correct hitch for every drawbar job.

BELT PULLEY AND POWER TAKE-OFF

Both the belt pulley and power take-off are driven from a special clutch **(3)**. The drive is by bevel gears, running in oil.

The belt pulley attachment is standard equipment. It consists of a simple, compact assembly, and is removable. Pulley diameter, 16¾″; face, 8¼″. Rotation is clockwise; speed, 596 r.p.m. at regular 1125 r.p.m. engine speed; belt speed, 2600 feet per minute.

The power take-off attachment consists of a shaft with bearings. Rotation is clockwise; speed, 530 r.p.m. The six-splined end is standard 1⅜″. This attachment is special equipment, but the connection **(30)** is built-in so that the device can be installed easily at any time.

The "90's" Roomy Platform, Comfortable Seat and Convenient Controls Mean Easier Driving.

STEERING GEAR IN OIL

The worm and gear type steering mechanism **(2)** operates in oil in a separate compartment. It has antifriction bearings, with an eccentric bearing to take up wear. Turning radius is only 14 feet. Big, hard rubber steering wheel.

DROP FORGED AXLE AND STEERING ARMS

The front axle **(16)**, knuckles and steering arms are drop forged for greatest strength.

SEAT AND PLATFORM

The seat of the "90" **(31)** is spring mounted, and swings out of the way if the operator wants to drive standing. The platform **(32)** is low and roomy, and is made of tightly fitted metal plates which prevent dust from filtering in at the bottom or sides.

STURDY FENDERS

The fenders **(33)** of the "90" are of heavy gauge sheet steel, reinforced and securely mounted. They protect the operator and are amply strong to withstand hard use.

COMPLETE WHEEL EQUIPMENT

Offered with wheel and lug equipment to develop and utilize maximum power, the Oliver "90" meets all road and field work requirements. The "90" is regularly equipped with flat rim front wheels with skid bands, and with steel drive wheels with 5″ high, rolled section steel spade lugs. Lugs are firmly held in place by two bolts. Special two-bolt spade lugs, angle iron lugs, cone lugs, extension rims, overtires and rubber tires with cast disc wheels are also available.

ELECTRIC STARTER AND LIGHTS

There's nothing like a starter to start you off right on a big day's work—no cranking at any time, especially on cold, frosty mornings, or when you're starting and stopping. Just touch the starter and you're away. An electric starter with Bendix drive will be supplied on factory orders at slight additional cost.

TOOLS ARE LIGHTED, TOO

Electric lights for night work are also available, the two headlights fasten rigidly on the radiator shell, and a single rear light mounts on the right fender, thus

The "90" Brings Surplus 4-Plow Power with Economy to All Big Acreage Farming Jobs.

FOR EVERY BIG POWER JOB—DAY OR NIGHT—DRAWBAR—BELT—POWER TAKE-OFF

both the tractor's path and the working tools are clearly lighted.

BUILT FOR OUTSTANDING PERFORMANCE

The compactness of the "90", its easy handling, steady power, convenience and accessibility make it the finest 3-fuel tractor of its power and type in existence today. It has been engineered from the ground up to do big work at low cost. It is a notable member of the famous Oliver Line—the tractor line that has always given the most power, for the longest time, at the lowest cost.

OLIVER RICE FIELD "90" TRACTOR

The Oliver Rice Field "90" Tractor is similar to the Oliver "90" except that it is equipped with regular Rice Field Tractor Steel Wheels. The rear wheels are 46″ in diameter, have a 12″ face, and are equipped with 6″ spade lugs. The front wheels are 29″ in diameter with a 6″ face, and have a 2″ high angle steel skid band. This equipment permits the Rice Field "90" to secure proper traction under normal operating conditions. Adequate dirt and water seals are provided on the rear axles.

Rice growers will appreciate the extra power delivered by the engine of the Rice Field "90", as well as the self-starter, lights, modern four-speed transmission, and other features.

The approximate weight of the Rice Field "90" Tractor, equipped as above, is 5,750 pounds.

OLIVER "90" INDUSTRIAL TRACTOR

The Oliver "90" is available in various combinations of special speeds, and wheel and tire equipment for all types of industrial applications. Write your nearest Oliver Branch for information.

MISCELLANEOUS SPECIAL EQUIPMENT

The following special equipment is available for "90" Tractors: mud scrapers for front wheels; overtires for 5″ and 6″ lugs and for Tip Toe Wheels; standard type or spark arresting mufflers.

The final power of the tractor comes from its traction—the ability to get sure footing that will put its full power to work. In Oliver "90" wheel equipment you will find the equipment needed in your territory for all soils and seasons.

Your Oliver Dealer will be glad to assist you in selecting the type of equipment to develop the utmost of the "90's" great delivered drawbar power.

(*See next page*)

THE OLIVER "90" 4-PLOW POWER

The Oliver "90" Tractor

MODERN *BIG* POWER FOR *BIG* ACREAGE FARMING

WHEEL AND LUG EQUIPMENT FOR EVERY TYPE OF SOIL

FRONT WHEELS

Standard Steel Wheel—Flat Rim Steel Front Wheel with skid band, 29″ in diameter, 6″ face. Front wheel extension rims 5″ wide, and skid bands, are available.

Rubber Tire Wheel—Cast Disc Front Wheel with Rubber Tire; demountable rim. Tire Size: 7.50-18.

REAR WHEELS

Wheel No. 1—Standard wheel with 12″ rim, equipped with cone lugs, three rows. Lugs are 2½″ high. Used to best advantage on dirt roads, in hay fields and meadows, also on frozen or icy ground.

Wheel No. 2—Standard wheel with 12″ rim equipped with 20 special road lugs. Lugs are 1⅝″ wide at base, have a one-inch wide face, are 15″ long, and 2″ high. This lug can be used on concrete, gravel or other hard-surfaced road.

Wheel No. 3—Standard wheel with 12″ rim equipped with 12 angle iron lugs, 2½″ wide at base, ⅜″ wide face, 3½″ high and 14″ long. This lug is satisfactory in loose, loamy and sandy soils.

Wheel No. 4—Standard wheel with 12″ rim with California special 2-bolt cast spade lugs with chilled points. There is a 33° angle to the face of the lug, 24 lugs to the wheel, and they are 5″ high. Especially adapted for sandy soil.

There also is a Standard Wheel with 12″ rim equipped with special 2-bolt forged steel, 6″ spade lugs.

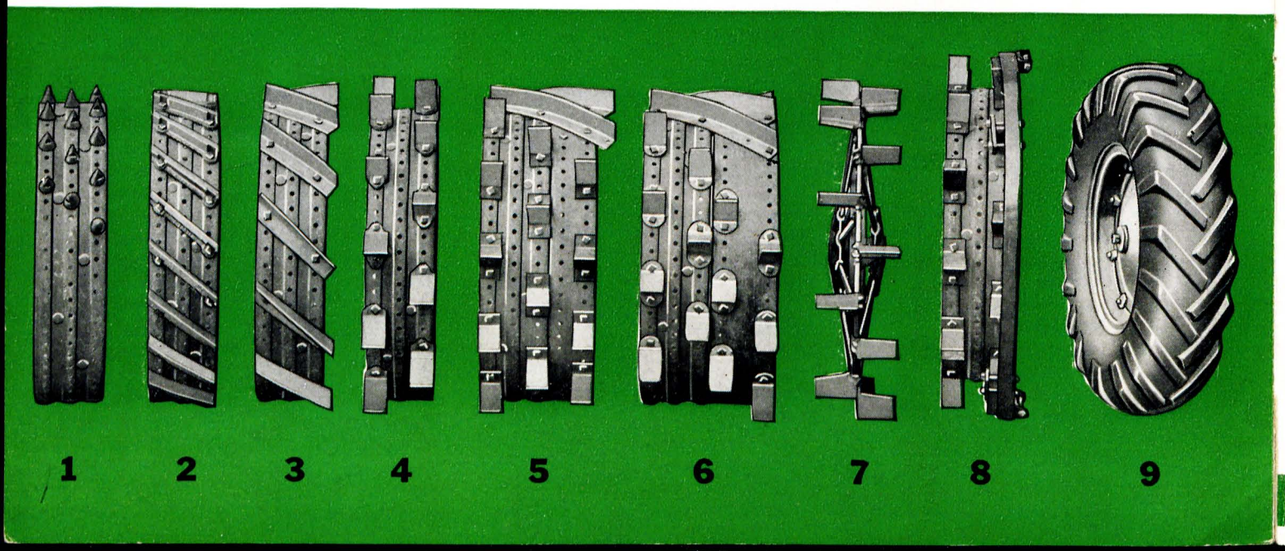
Wheel No. 5—Standard wheel with 12″ rim with 7″ extension rim, equipped with standard 2-bolt steel spade lugs 5″ high. 36 lugs per wheel.

Wheel No. 6—Standard wheel with 12″ rim, with 12″ extension rim. As cut shows, this wheel may be equipped with various combinations of lugs. Shown are the special 6″ forged steel, 2-bolt spade lugs, the special California 2-bolt cast lugs, the 2½″ cone lugs (not illustrated), and the 29″ angle iron lugs. Any of the lugs used on wheels 1, 4, 5 and 6 can be used on this dual wheel.

Wheel No. 7—This is the famous Oliver Tip Toe Wheel for the Oliver "90" Tractor equipped with 6″ offset spade lugs, 20 per wheel. This type wheel is very satisfactory where soil is firm and solid and where the desire is to secure traction with a minimum of soil packing. Tip Toe extension rims with 6″ spacer lugs also available, making wheel 18″ wide.

Wheel No. 8—Standard wheel with 12″ rim equipped with a set of standard 5″ 2-bolt steel spade lugs and a 3″ overtire. The overtire can be put on over the lugs when the tractor is to be run on concrete or other hard-surfaced roads.

Wheel No. 9—Cast Steel Rear Wheel with Rubber Tire; demountable rim. Tire sizes: 12.75-28 or 13.50-28.



SPECIFICATIONS

(Specifications Subject to Change Without Notice)

The Oliver "90" Tractor

Motor—Own. Four-cylinder I-head, vertical, valve-in-head, bore 4¾″, stroke 6¼″, speed 1125 r.p.m. Crankshaft diameter, 3″. Valves, inlet 2″, exhaust 2″. Three bronze-backed, babbitt-lined main bearings. Four rings per piston. Renewable nickel iron cylinder sleeves. Ventilation by crankcase filter breather. Motor assembly removable from frame. Four-point suspension. Hood sides.

Lubrication—Pressure to all main, camshaft, connecting rod, piston pin, rocker-arm and governor shaft bearings. Drilled leads in crankshaft connecting rods, crankcase and cylinder block. Oil circulation to timing gears and fan bearing. Large oil filter. Heavy-duty oil pump. Pressure indicator.

Governor—Centrifugal, variable speed type. Fully enclosed and automatically lubricated. Hand control from tractor seat.

Ignition—High-tension magneto with impulse coupling. Fully sealed against dust and moisture.

Air Cleaner—Oil-wash type with auxiliary centrifugal. Protects motor parts from undue wear and damage caused by grit and dirt entering with fuel mixture.

Cooling System—Circulation by pump on fanshaft. Fan and pump driven by V-belt direct from crankshaft. Circulation from front to back and top to bottom in engine forces cool water to engine head first. Maintains uniform engine heat. Keeps valves and valve stems cool. Radiator, tubular-cast-iron frame and tanks. Radiator curtain. Temperature gauge. Capacity of system, 10½ gallons.

Fuel System—Operates with kerosene, gasoline or distillate. Redistribution chokes in manifold force equal fuel loads to all cylinders. Gravity feed from tank. Capacity of main fuel tank, 34 gallons. Capacity of auxiliary gasoline tank for starting on kerosene or distillate, 1 gallon. Fuel strainer in fuel line removes foreign matter from fuel.

Transmission—Selective, sliding spur. Four speeds forward, one reverse. Chrome-nickel steel used in all gears and shafts. Shafts heat-treated for maximum strength. Gears hardened for maximum wear, with teeth cut and shaped. All shafts mounted on large ball and roller bearings. Transmission fully sealed, running in oil. Power to rear wheels through live axle.

Clutch—Fully enclosed. Single plate, dry type, quickly adjustable, removable as unit, 14″ diameter. Foot pedal operated.

Belt Pulley—Extra large. 16¾″ diameter, 8¼″ face. Speed, 596 r.p.m. Belt speed 2600 feet per minute. Mounted on right side of tractor ahead of drive wheels. Special pulley drive clutch to operate. Pulley does not run when tractor is in motion.

Steering—Worm type. Turning radius, 14 feet. Eccentric bearing to take up wear. Hard rubber steering wheel.

Wheels—Front, diameter 29″, 6″ face. Equipped with skid bands. Timken bearings. Rear, diameter 46″, 12″ face.

Lug Equipment—Standard, 48–5″ two-bolt rolled steel section spade lugs. Skid bands for front. Other equipment for special conditions. Wheel scrapers available at extra cost.

Speeds—Low, 2¼; intermediate, 3⅓ and 4⅓; high, 5½ m.p.h.; reverse, 3¼ at governed engine speed.

Drawbar—Spring-mounted, 13″ from ground. 23½″ lateral adjustment, 6″ vertical adjustment.

Power Take-Off—Spline connection built into pulley gear assembly. (Extra equipment) Standard 1⅜″ splined shaft and connections. Rotates clockwise at 530 r.p.m. On center line of tractor. Operated by pulley drive clutch, independent of tractor progress.

General Dimensions—Wheel base, 80″. Length over all, 125¾″. Width over all, 65″. Height to top of radiator, 59½″. Tread, 52″.

Weight—Approximate shipping, (regular equipment) 5700 lbs.

THE OLIVER "90" 4-PLOW POWER

1 Selective Automotive Type Sliding Spur 4-Speed Transmission.

2 Quick-Action Steering. Worm and Gear Steering Mechanism Operating in Oil. Large Hard Rubber Steering Wheel.

3 Separate Clutch for Pulley and Power Take-Off with Positive Gear Drive.

4 Sediment-Free Fuel System. Big Fuel Tank.

5 Convenient Inspection Plates for All Gears.

6 Oil Wash Air Cleaner with Auxiliary Centrifugal to Protect Engine.

7 Big Diameter Valves, Readily Accessible. Water-Jacketed Valve Stem Guides. Pressure Lubrication to Rocker Arms.

8 Powerful Valve-in-Head Engine Burns Gasoline, Kerosene or Distillate.

9 Efficient Cooling System Maintains Uniform Engine Temperature.

10 Ignition from Induction-Type High Tension Magneto. Cylinder Head of Exclusive Oliver Design.

11 Automatic Lubrication to Fan and Water Pump Bearings. Fan Belt Pulley Adjustable to Take Up Wear.

12 Replaceable Long-Wearing Nickel Iron Cylinder Sleeves; Honed Finish.

13 Nickel Iron Pistons; Accurately Machined. Matched Sets of Pistons and Connecting Rods.

14 Positive Gear Driven Timing.

15 "Spun In" Babbitt Connecting Rod Bearings.

16 Drop Forged Axle, Knuckle and Steering Arms.

17 (Not shown) Carburetor and Exclusive Manifold Deliver Correct Fuel Mixture for All Loads. Variable Speed Governor.

18 Pressure Lubrication to Wrist Pins.

19 Three-Inch Crankshaft.

20 Gear-Driven Oil Pump. Oil Forced Under Pressure to Bearings through Drilled Oil Leads. Oil Filter.

21 Three Big Bronze-Backed, Babbitt-Lined Main Bearings.

22 Extra Large, Foot Operated, Removable Single Disc Dry Clutch.

23 Ball or Roller Bearings on All Transmission Shafts.

24 Upper and Lower Transmission Shafts May be Removed as a Unit.

25 Two Compartments in Transmission Case Maintain Thorough Lubrication on Hilly Ground.

26 Transmission Gears All Cut from Chrome-Nickel Steel.

27 Transmission and Differential Run in Oil.

28 Widely Adjustable, Spring-Cushioned Drawbar.

29 All Gear Drive.

30 Convenient Power Take-Off Connection.

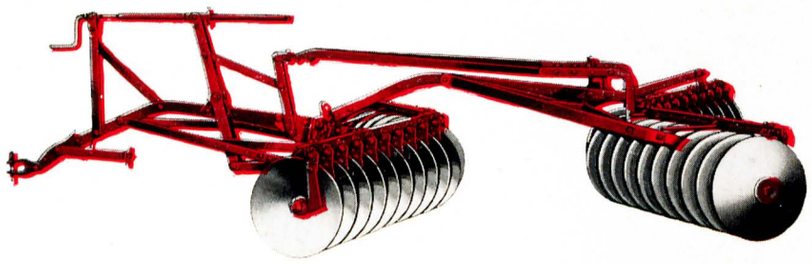
31 Adjustable Spring-Mounted Seat.

32 Low, Roomy Platform.

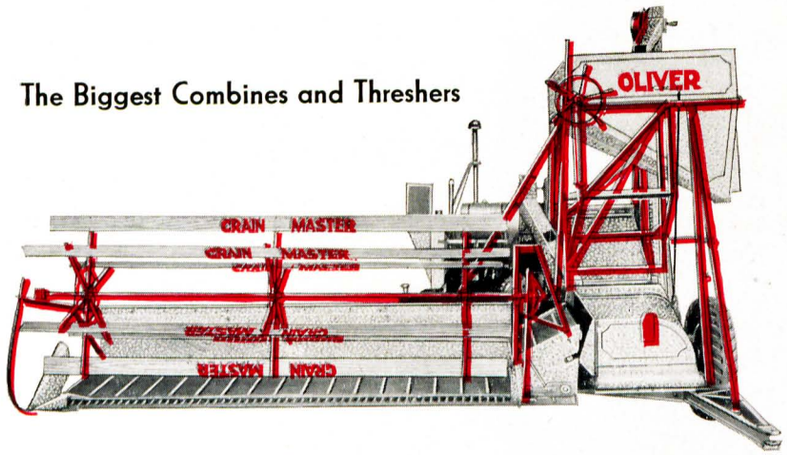
33 Strong Fenders of Heavy Gauge Steel.

OLIVER TOOLS AND THE OLIVER "90" ARE NATURAL TEAMMATES

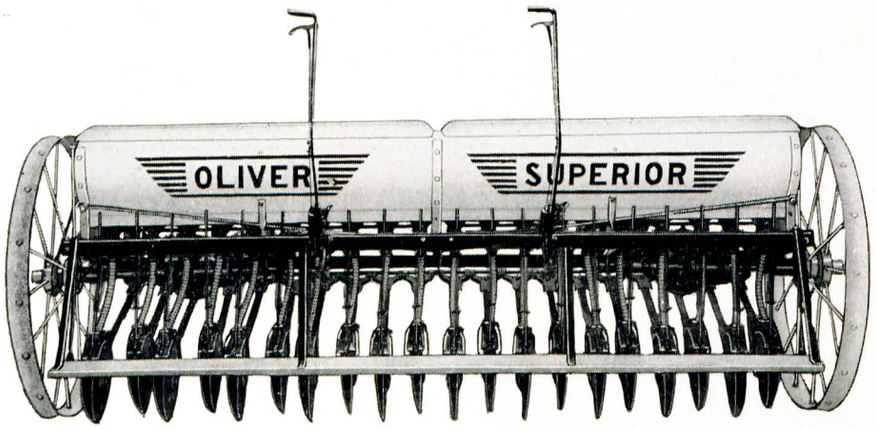
Disc Harrows, Spring Tooth Harrows and Spike Tooth Harrows of All Types

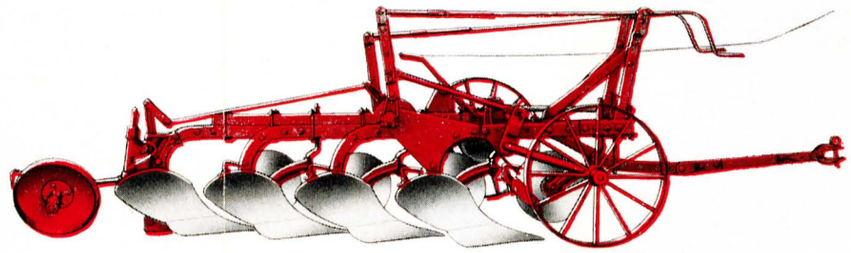


The Biggest Combines and Threshers

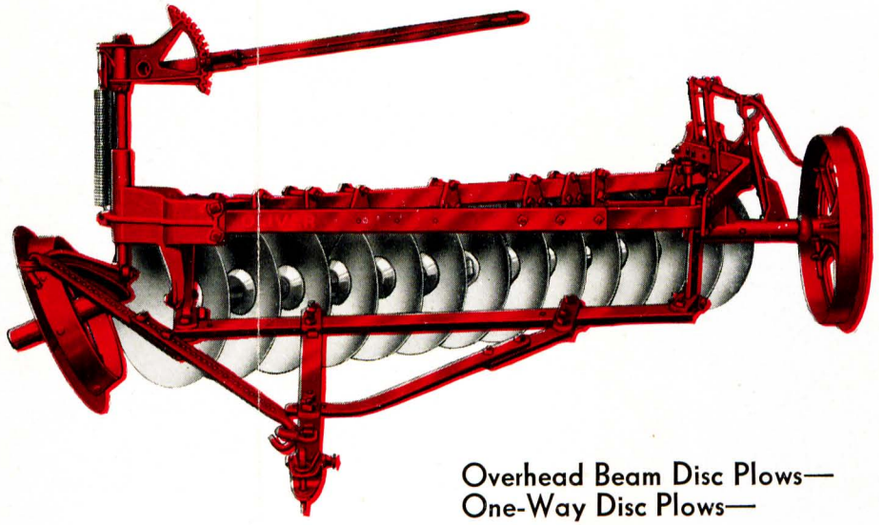


Grain, Seed and Fertilizer Drills



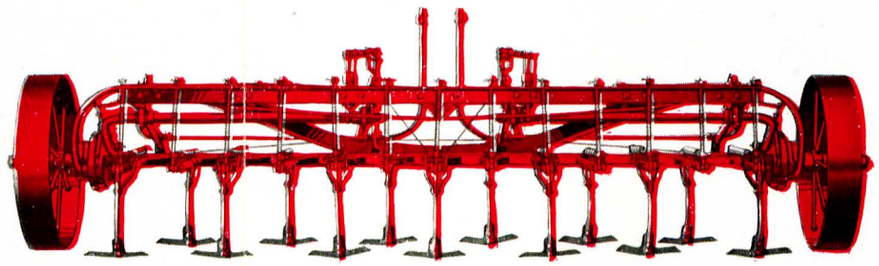


Tractor Moldboard Plows



Overhead Beam Disc Plows—
One-Way Disc Plows—

Duck-Foot and Spring Tooth-Fallovators—
Field Cultivators and Special Tillage Tools



Tractor Moldboard Plows
Tractor Disc Plows
Disc Harrows
Spring Tooth Harrows
Fallovator and Special Tillage Tools
Grain, Seed and Fertilizer Drills
Broadcast Seeders and Lime Sowers
4-Row Lister Cultivator
10-Foot Grain Master Combine
32x56 Red River Special Thresher
Corn Master 2-Row Picker-Husker

—and Oliver is ready to meet your needs wherever you are.

OLIVER FACTORIES

OLIVER PLOW DIVISION
South Bend, Indiana
Plows—Tillage Tools—
Hay Tools

NICHOLS & SHEPARD DIVISION
Battle Creek, Michigan
Combines—Threshers—
Corn Pickers

AMERICAN SEEDING DIVISION
Springfield, Ohio
Drills—Planters—Spreaders

HART-PARR DIVISION
Charles City, Iowa
Tractors—Special Power Units

BRANCHES

(Write the Branch Nearest to You.)

Amarillo, Texas
Atlanta, Ga.
Battle Creek, Mich.
Billings, Mont.
Charles City, Iowa
Columbus, Ohio
Dallas, Texas
Denver, Colo.
Des Moines, Iowa
Fargo, N. D.
Great Falls, Mont.
Harrisburg, Pa.
Houston, Texas
Indianapolis, Ind.
Kansas City, Mo.
Lansing, Mich.
Lincoln, Nebr.
Los Angeles, Calif.
Louisville, Ky.
Memphis, Tenn.
Minneapolis, Minn.
Minot, N. D.
Montgomery, Ala.
Nashville, Tenn.
Oakland, Calif.
Ocala, Fla.
Oklahoma City, Okla.
Omaha, Nebr.
Peoria, Ill.
Richmond, Va.
Rochester, N. Y.
Saginaw, Mich.
Shreveport, La.
Sidney, Nebr.
Sioux Falls, S. D.
South Bend, Ind.
Springfield, Mo.
St. Louis, Mo.
Waukesha, Wis.
Wichita, Kans.

OLIVER FARM EQUIPMENT, LTD.

Calgary, Alta. Edmonton, Alta. Regina, Sask.
Saskatoon, Sask. Winnipeg, Man.

DISTRIBUTORS

New York, N. Y.
Ogden, Utah
Phoenix, Ariz.
Portland, Ore.
Sarnia, Ont.
Spokane, Wash.

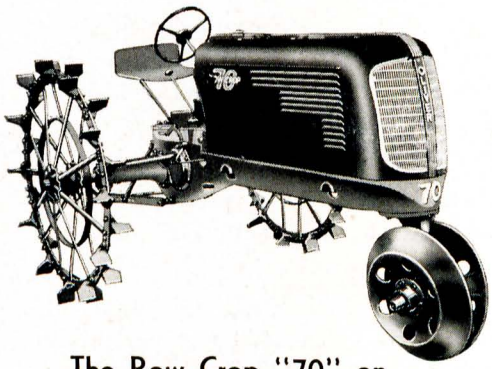
OLIVER
FARM EQUIPMENT SALES COMPANY

A-390—Printed in U. S. A.—2-40—20M

THE "90" PROVIDES STEADY, EFFICIENT POWER FOR EVERY BIG-ACREAGE JOB

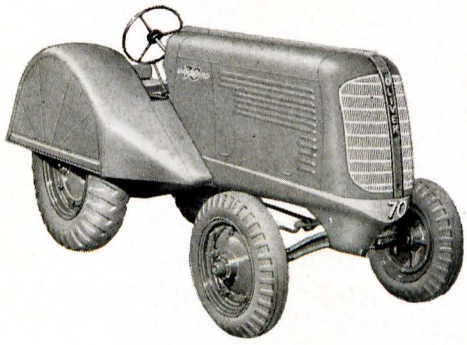
OLIVER TRACTORS LEAD THE WORLD IN THE FIELD WITH THE MOST MODERN FARM POWER BUILT

"70" — 2 PLOW



The Row Crop "70" on Tip Toe Wheels

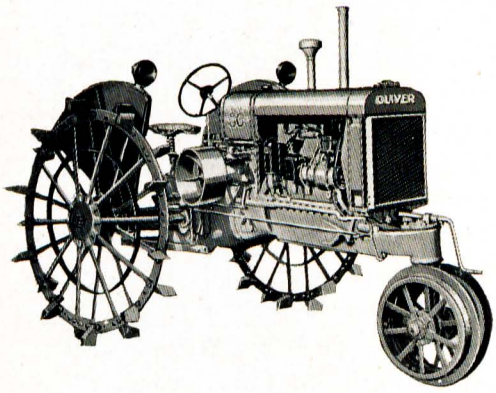
The Standard "70" on Rubber Tires



The Orchard "70" on Rubber Tires

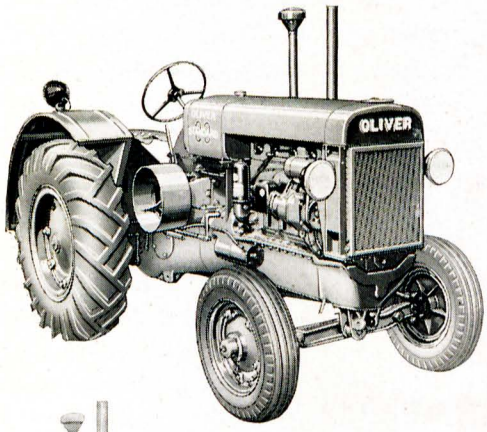
Built in Two Fuel Types: HC for Gasoline and KD for Kerosene or Distillate

"80" — 3 PLOW



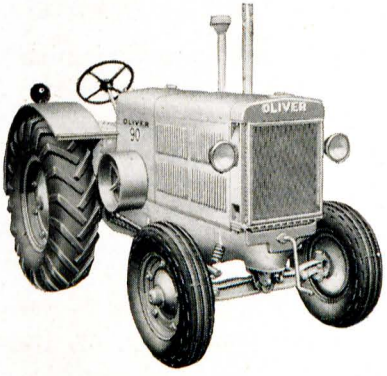
The Row Crop "80" on Tip Toe Wheels

The Standard "80" on Rubber Tires

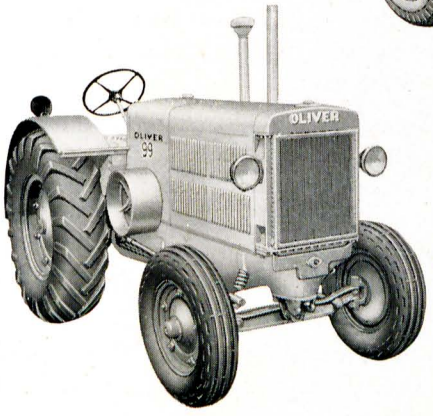


"90" 4-PLOW

3-FUEL: GASOLINE-KEROSENE-DISTILLATE



The Finest 4-Plow Tractor Built



The Most Powerful Tractor on Wheels

"99" 5-PLOW

HIGH COMPRESSION: GASOLINE ONLY

MORE POWER — BE[illegible]VER ON STEEL OR RUBBER